verſed the ocean; while perforating rocks, or making tunnels for thoſe veſſels, would never intrude on their imagination. Such circumſtances would conſequently defeat every undertaking in an irregular country; it is therefore natural to conclude, that each Egyptian canal muſt have preſerved one level; particularly when we conſider, that Lower Egypt *(in which they were formed)* is a flat and uniform country.

But although the Egyptians, Greeks, and Romans, were unacquainted with any mode of paſſing boats to, and from, different levels of water; there is great reaſon to believe the Chineſe have long been familiar with an apparatus for this purpoſe. Their machine conſiſts of an inclined plane, and a cradle to receive the boat; beneath the cradle are ſeveral rollers acting on gudgeons; into this the boat is floated, which fits it ſo exactly as to give equal preſſure on all its parts; the whole is then raiſed to the next level, or pond of canal (or let down, as the caſe may be), by men at a capſtan (others ſay, by a water wheel); but it is probable both modes are practiſed, according to the abundance, or the ſcarcity, of water. The imperfect accounts of China, which have reached Europe, leave us much in the dark as to the ſpecific operation; and a European mechanic cannot conceive how the power obtained by a capſtan, or any other apparatus where manual exertion is the acting force, can be ſufficiently quick to accommodate a conſiderable trade, without incurring a prodigious expence by the number of men employed; as it would occupy at leaſt thirty men during fifteen minutes, to raiſe a boat of twenty tons to the height of ten feet; the boat, cradle, and cargo, ſuppoſed to equal thirty tons; and a repetition of this operation, for inſtance, ſo often as is neceſſary to mount a boat 200 feet, muſt not only be tedious but expenſive; yet all writers agree as to the magnificence of theſe canals, and their aſtoniſhing length: the canal from Canton to

Pekin

Pekin being 825 miles long, through which an immenſe trade is conducted. Indeed, ſo vigilant are the Chineſe over theſe works, that they come under the immediate protection of the executive power, and in the inſtructions given to governors of provinces, theſe objects are recommended to their particular care. In conformity to this principle, the opinion which the court forms of their conduct is greatly influenced by the attention which they appear to have paid to this part of their inſtructions: this branch of the police is, conſequently, well attended to; and their canals have the reputation of being infinitely ſuperior to any thing of the kind in Europe. Hence, notwithſtanding the great extent of the empire of China, the vaſt multitude of its inhabitants, and variety of its climate, the conſequent productions of all parts are tranſported to, and from, the different provinces, with ſuch facility as to open a home market ſufficient to ſupport extenſive manufactures.

Machines, ſimilar to thoſe of the Chineſe, have been erected in Flanders, on river navigations, where interrupted by falls, or ſhoal water; while another mode adopted has been to erect a dam, or wear, acroſs the river below the fall, in which was placed two ſtrong buttreſſes of ſtone, with perpendicular grooves; after paſſing the boat above the buttreſs, a ſtrong gate was let down the grooves, which ſtopped the water till it roſe to a ſufficient height to enable the boat to paſs; this apparatus, tedious in the proceſs, profuſe of water, and liable to injury from every flood, in all probability gave the firſt hint of locks. And this ingenious invention opened a new ſcene in canal navigation, in conſequence of the facility of paſſing to and from the different levels. Since which, numerous important works have been executed in the Netherlands, and in different parts of Europe.

Of

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